



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2019/2020
SUPPLEMENTARY/SPECIAL EXAMINATION FOR THE DEGREE OF
BACHELOR OF PHARMACY (B.PHARM)
PPD 320: PHARMACOGNOSY II

INSTRUCTIONS:

- The paper consists of three sections A, B and C
- Answer ALL questions
- Answer sections A, B and C in separate booklets

SECTION A:

1. Critique the following information found in some text books of Pharmacognosy:

- a. Lanolin is referred to as Wool fat. (3 marks)
- b. Theobroma oil is solid at room temperature. (2 marks)

2. For the following health conditions, suggest one natural product that is either a resin, wax

or oil that can be used to manage it.

- a. Tapeworm infestation. (2 marks)
- b. Genital warts. (2 marks)
- c. Lice infestation. (2 marks)
- d. Skin cracks. (2 marks)
- e. Genital cancer. (2 marks)
- f. Dysentery. (2 marks)

3. Alice is starting an essential oils manufacturing company for the pharmaceutical and perfumery industries based on natural scent of flowers of the Savannah. Alice is planning to use a large scale steam distiller for the project.

- a. Explain why Alice will not obtain essential oils having natural scent from the flowers using the distiller. (5 marks)
- b. Describe one method that Alice can use to obtain essential oils having natural scent. (5 marks)

4. Anointed oil is being used widely by preachers to “treat various diseases” among the faithful.
 - a. Suggest the name of this oil and its biological source. (3 marks)
 - b. Unknowingly, the preachers of Mwingi town use a substitute “Anointed oil” supplied by Makau. Describe how Makau purifies crude cotton seed oil so as to look and smell like a genuine Anointed oil. (10 marks)

SECTION B: PPD 322: GLYCOSIDES

1. Regarding anthraquinone glycosides:
 - a. Illustrate the chemical structure in which they are based (2 marks)
 - b. Discuss three established aglycones and their uses (6 marks)
 - c. State six plants which they can be derived from (6 marks)
2. Regarding saponin type of glycosides, describe the following
 - a. How you can detect a saponin in a given plant (3 marks)
 - b. Five pharmacological activities associated with saponins (10 marks)
3. With the help of appropriate structures, differentiate between cardenolides and Bufadienolides (5 marks)
4. Describe three aglycones from *Digitalis purpurea* and their pharmacological importance (6 marks)
5. Describe one plant source of tannins and the specific aglycones derived from it (2marks)

SECTION C: PPD 323: ALKALOIDS

Short answer and essay questions [40mks]

1. Describe the Quinoline class of alkaloids (4 marks)
2. List four isoquinoline alkaloids and explain their natural sources and therapeutic uses (4 marks)
3. Compare and contrast the basic skeletal structure, natural sources and pharmacological applications of imidazole alkaloids and pyrrolizidine alkaloids. (4marks)
4. Explain the natural source, the chemical class and the current therapeutic applications of calystegines. (4marks)
5. Describe two tests for alkaloids (4 marks)

6. Many clinically useful drugs are derived from the indole class of alkaloids. Substantiate this statement taking into account the various clinically useful drugs, their natural sources and pharmacological applications. (10 marks)
7. Discuss how intensified research in indolizidine and steroidal alkaloids is of paramount importance in propelling the world towards the realization of its health care and economic goals as outlined in the Global Goals for Sustainable Development. (10 marks)